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African Swine Fever

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An Expanding Threat to American Hogs

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African Swine Fever: An Expanding Threat To American Hogs

African swine fever (ASF) is a contagious, usually fatal viral disease of swine. It can be the most deadly of all foreign diseases of hogs. The acute form kills almost all hogs that become infected.

Other species of animals are not susceptible to the disease. It does not affect humans.

Since the 1960's, a milder form of ASF has been increasingly reported. Because this chronic strain has a lower death rate than the acute form, it is more difficult to diagnose and thus is harder to eradicate.

Both the milder form and acute ASF are often confused with hog cholera. The signs are almost identical, although the viruses are not related. ASF also can be confused with other swine diseases.

No effective vaccine has been developed for ASF, and no effective treatment is known.

Where It Occurs:

African swine fever has probably infected several kinds of wild pigs in Africa for many years. It was first recognized among domestic European swine in Kenya in 1909.

The global threat of the disease became apparent when ASF invaded Portugal in 1957. It spread to Spain in 1960, and to France in 1964. France reported further outbreaks in 1967 and 1974, but successfully eradicated the disease through quarantine and slaughter. Outbreaks have also occurred on mainland Italy and on the islands of Malta, Sardinia, the Canary Islands, and Madeira since the mid-1960's.

In 1971, ASF penetrated the Western Hemisphere for the first time. The disease struck Cuba, and the swine population of Havana province had to be slaughtered before the disease was eradicated.

Further outbreaks in the Western Hemisphere were confirmed in Brazil and the Dominican Republic in 1978 and in Haiti in 1979.

If An Outbreak Should Occur In The United States:

If an outbreak should occur in the United States, it is probable that—unless immediate steps were taken to control the disease—ASF would spread rapidly to all sections of the country. It is also probable that most exposed hogs would develop ASF, and either die or become unprofitable as stunted hogs.

Plans for a U.S. emergency eradication program against ASF have already been developed. State and Federal animal health authorities will begin eradication immediately upon confirmation of an outbreak.



Sows with ASF may abort at any stage of pregnancy and all feti will be at a similar stage of development. Hemorrhage is often apparent on feti and fetal membranes (left). Economic losses with ASF result not only from death and abortion in swine, but also from slow-gaining or stunted survivors of the disease (top right).

In African swine fever, skin may become reddish on belly, hams, legs (top left, bottom), ears, and snout. Typically seen only in white pigs, this characteristic color also occurs in hog cholera.





Spread:

African swine fever spreads rapidly in both its acute and chronic form.

Infected pigs are a primary source of the disease. Hogs that recover from ASF can still transmit the virus for a long period of time. The virus of ASF is present in all excretions and secretions of the infected pig and may persist outside of its hosts for long periods of time.

In Africa, wild pigs are carriers. Though they show no signs of illness, infected wart hogs and wild bush pigs transmit the disease to domestic swine.

ASF can be spread by:

- Contact between infected and susceptible hogs.
- Carrier animals.
- Contaminated garbage, feed, or water.
- Infected ticks (particularly soft ticks).
- Contaminated insects—lice, biting flies.
- Contaminated premises, clothing, footwear, equipment.
- Contaminated vehicles.
- Improper disposal of infected carcasses.
- Aerosol transmission within the herd.

Recent studies indicate that certain soft ticks may actually be natural hosts of ASF, and are capable of transmitting the virus from one generation to the next. Thus, ticks on ASF-infected farms may carry the virus for longer than 6 months and could infect reintroduced swine. The virus is highly resistant to environmental conditions, such as high temperatures. Only certain disinfectants are effective for the virus.

Many outbreaks have been traced directly to uncooked garbage fed to hogs.

Signs:

ASF may resemble hog cholera and other common swine diseases. It is almost impossible to tell the difference by observing sick pigs.

Susceptible hogs will develop ASF 5 to 15 days after exposure. Some may die before the signs are apparent.

In ASF, an infected pig first undergoes an abrupt rise in temperature, from a normal 101° F (38.3° C) to 105° F (40.6° C) or higher. The animal may seem to “burn up” with fever.

Swine with acute ASF ordinarily die 4 to 7 days after the onset of fever. The temperature usually falls quickly a day or two before death.

In the sub-acute form of ASF, 50 percent or more of the herd may survive the acute phase of the disease. Survivors are often stunted and make poor gains.

In ASF, some or all of the following signs may be seen:

- Abortions.
- Tendency to lie down.
- Depression.

- Discolorations—blotchy or diffuse redness—on ears, snout, tail, legs, abdomen, and flanks of white-skinned hogs.
- Labored breathing.
- Coughing.

One difference between ASF and hog cholera may be the appetite of the infected hog. Pigs with ASF often continue to eat and drink limited amounts of food and water until near death, while pigs with hog cholera usually go off feed and die without regaining their appetites.

Post Mortem Lesions:

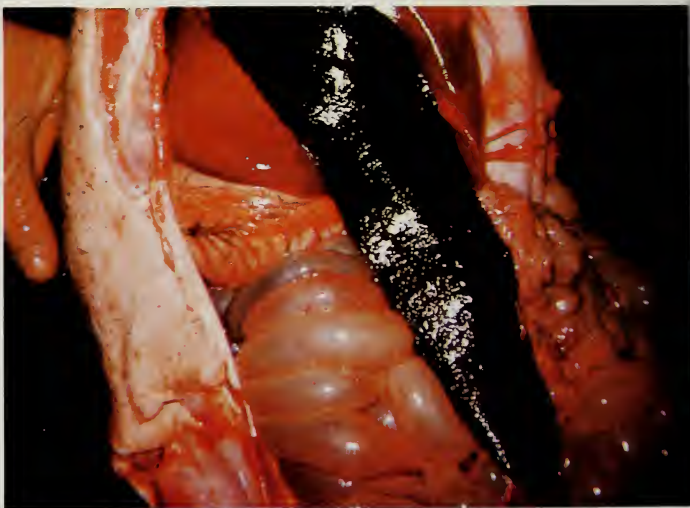
African swine fever produces lesions similar to those caused by hog cholera, salmonellosis, erysipelas, and various toxins.

Edema, ascites, and hemorrhage are the most frequently observed lesions in ASF.

Hemorrhages, varying from small pinpoints of blood in tissues to massive amounts of free blood, may involve almost any organ of the body. The following organs are most frequently affected:

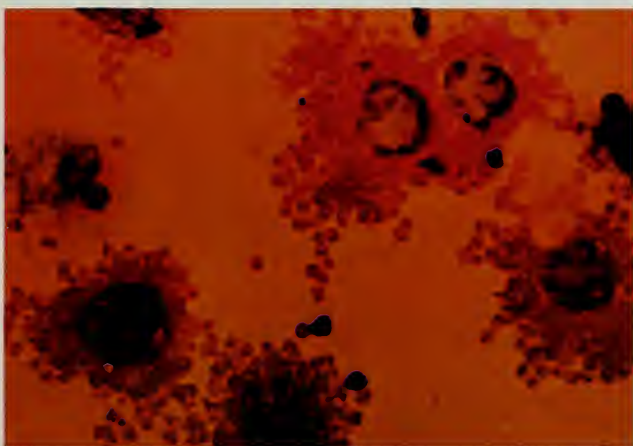
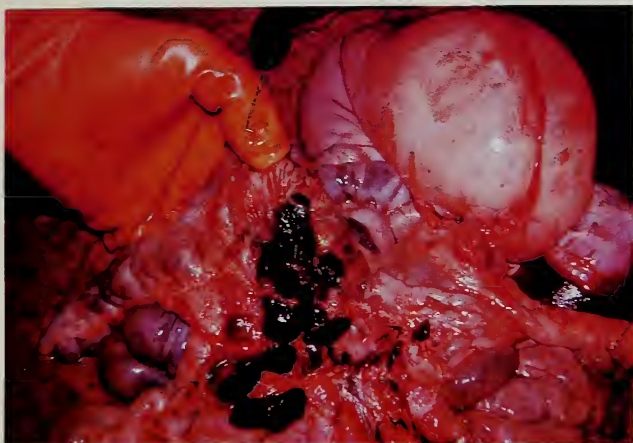
- Skin—reddening on ears, snout, abdomen, and hind-quarters.
- Lungs—hemorrhages plus edema and pneumonia.
- Lymph nodes—hemorrhages may be minute and diffused, or entire node may resemble a blood clot.
- Liver—often enlarged and discolored.
- Kidney—hemorrhage ranges from pinpoint to entire organ.
- Spleen—may be enlarged or occasionally infarcted.
- Heart—hemorrhages in heart muscles.
- Diaphragm—hemorrhages.

Excessive fluid may be present in body cavities and joints. Occasionally, death is sudden and no obvious lesions are found.



Hogs dying from the milder, chronic strains may also have secondary infections, which complicate the clinical and post mortem picture.

As milder forms emerge, it is becoming more difficult to distinguish between ASF and other swine diseases at necropsy.



Spleen of pig with African swine fever is greatly enlarged and dark—almost black—in color (bottom left).

Mesenteric lymph nodes—normally light-colored—appear as blood clots in African swine fever (top)

“Clumping” of red blood cells around infected white cells in test tube proves African swine fever virus is present. This test, developed by USDA scientists employed by Plum Island Animal Disease Laboratory, is used to diagnose the disease quickly (above).

Diagnosis:

A provisional diagnosis of ASF may be made on the basis of the clinical signs, gross lesions, and history of the swine population in the area. However, since the disease so closely resembles many other swine diseases, a laboratory confirmation must be made.

Report any suspicious case immediately to your veterinarian, State or Federal animal health officials, or your county agricultural agent.

Every report will be investigated. Several tests are available to differentiate between ASF and other diseases.

If tests confirm either ASF or hog cholera, eradication measures will be started at once.

Prevention:

The U.S. Department of Agriculture—to prevent the introduction of African swine fever or the reintroduction of hog cholera—prohibits live hogs and uncooked pork from entering any country known to be infected with these diseases. The only pork products allowed from such countries are those that have been commercially canned, hermetically sealed, and fully sterilized to produce a shelf-stable product without refrigeration. Strict inspection and quarantines are conducted at U.S. ports of entry.

What You Can Do:

You can—

- Watch your herds. Be alert to abnormal conditions.
- If any hogs show signs of African swine fever or hog cholera, notify your veterinarian, State or Federal animal health officials, or your county agricultural agent at once.
- Isolate hogs showing signs of disease. Do not move them from your premises.
- Restrict movement of all livestock on your premises if you suspect an outbreak.
- Restrict movement of persons, vehicles, and equipment to and from your premises until you are notified of the diagnosis.

Veterinary Services

Animal and Plant Health Inspection Service

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